DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/27/11 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3, 4, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6276761 to Beck in view of US Patent 3181887 to Boylan et al.

Re: claims 1, 3, 4 and 13. Beck shows in the figure an electronic compressed air system for a vehicle comprising a compressed air supply part shown on the left side of the figure including a compressor 11 and a compressed air consumer part shown on the right side of the figure, the compressed air consumer part including a plurality of

service-brake circuits 2.1, 2.2 having compressed air load circuits and compressed air reservoirs as disclosed in col. 4 lines 45-47, a high pressure compressed air load circuit 2.3 (which is a high pressure compressed air load circuit as compared to the low pressure compressed air load circuit 2.4), and electrically actuatable valves 21, 22, 23 comprising a first plurality of electrically actuatable valves 21, 22 and at least one other electrically actuatable valve 23, wherein the first plurality of electrically actuatable valves 21, 22 are operable to supply compressed air to the plurality of service brake circuits and wherein the at least one other electrically actuatable valve is operable to supply compressed air to the high pressure compressed air load circuit, and wherein the first plurality of electrically actuatable valves are in an open position in a state, sensors shown above elements 31 for monitoring pressure in the service brake circuits, and an electronic control unit 15 for evaluating electrical signals from the sensors and for controlling the electrically actuatable valves, the at least one other electrically actuatable valve operable to supply compressed air to the high pressure compressed air load circuit being switchable by the electronic control unit between a closed position in a de-energized normal state as disclosed in col. 4 lines 29-30 and an open position to establish communication between the at least one other electrically actuatable valve with at least one of (i) the service brake circuits (ii) the compressed air resdrvoirs and (iii) the compressed air supply part, when compressed air is requested for the high pressure compressed air load circuit.

Beck discloses the first plurality of electrically actuatable valves being in an open position in a state, but is silent with regards to the electrically actuatable valves being in an open position in a de-energized default state.

Boylan et al. teach in col. 9 lines 40-42 the use of an electrically actuatable valve that is open in a de-energized default state to supply fluid to a service brake environment.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the service brake circuit valves of Beck to have been open in a de-energized default state, in view of the teaching of Boylan et al., in order to provide a means of supplying compressed air to the service brake circuits in a fail safe manner.

Re: claim 11. Beck, as modified, teaches in Beck in the figure the limitation wherein the electrically actuatable valves 21 and 22 and the electrically actuatable valve 23 associated with the high pressure compressed air load circuit are connected to a common compressed air distributor line 20 to which there is connected a compressed air supply line shown in the area at the end of the lead line of number 16 in communication with the compressor.

4. Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beck in view of Boylan et al. as applied above, and further in view of US Patent 4911617 to Buma et al.

Re: claim 2. Beck, as modified, is silent with regards to the high pressure compressed air load circuit being an air-suspension circuit.

Buma et al. teach in figure 1 the use of a compressed air system wherein a high pressure compressed air load circuit 20 is an air-suspension circuit.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the high pressure compressed air load circuit of Beck, as modified, to have been an air suspension circuit, as taught by Buma et al., in order to provide a means of leveling a vehicle during its travel along a road.

Re: claim 12. Beck, as modified, teaches in Beck that the system further comprises a check valve 16 disposed in the compressed air supply line and describes the presence of an air dryer, but Beck does not state that the air dryer is disposed in the compressed air supply line.

Buma et al. teach in figure 1 a system comprising an air dryer 7 disposed in the compressed air supply line 2a.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Beck, as modified, to have included the air dryer disposed in the compressed air supply line, as taught by Buma et al., in order to provide a means of purifying and drying the air before it reaches the consuming circuits.

5. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beck in view of Boylan et al. as applied above, and further in view of US Patent 4799707 to Buma et al.

Beck, as modified, is silent with regards to the system further comprising an electronic control device adapted to control the high pressure compressed air load circuit and to communicate with the electronic control unit via a data line.

Buma et al. teach in figure 1 a system comprising an electronic control device M9 adapted to control the high pressure compressed air load circuit and to communicate with an electronic control unit M8 via a data line shown between M8 and M9.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Beck, as modified, to have further included an electronic control device adapted to control the high pressure compressed air load circuit and to communicate with the electronic control unit via a data line, as taught by Buma et al., in order to provide a means of decreasing the pressure at the delivery port of the compressor to reduce the amount of torque needed to start the compressor to satisfy an air demand request.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beck in view of Boylan et al. as applied above, and further in view of US Patent 4616881 to Muller et al.

Re: claim 7. Beck, as modified, discloses in col. 4 lines 43-47 that each consumer circuit may include a reservoir then gives the example of circuits 2.1 and 2.2 having a reservoir, but is silent with regards to specifically the at least one secondary load circuit being without compressed air reservoirs.

Muller et al. teach in figure 1 the limitation wherein the compressed air load circuits have at least one secondary load circuit III and IV without compressed air reservoirs whereas circuits I and II have reservoirs 3 and 4, respectively.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the circuits of Beck, as modified, to have included at least one secondary load circuit without compressed air reservoirs, as taught by Muller et al., in order to provide a means of supplying compressed air without the need for superfluous components.

7. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beck in view of Boylan et al. and US Patent 4616881 to Muller et al. as applied to claim 7 above, and further in view of US Patent 6149246 to Terborn et al.

Re: claim 8. Beck, as modified, discloses in Beck at least one secondary circuit 2.4 and Beck, as modified, discloses that element 2.4 is specifically a low pressure circuit, but is silent with regards to the at least one secondary circuit specifically having a lower pressure level than in the service brake circuits.

Terborn et al. teach in col. 3 lines 14-17 the use of one circuit having a pressure that is lower than another.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the at least one secondary circuit of Beck, as modified, to have had a lower pressure level than in the service brake circuits, in view of the teachings of Terborn et al., in order to provide a desired pressure level depending on desired application. For example, one may provide less pressure in the secondary

circuit for the parking brake since it is used less frequently than the service brake and since the service brake can be utilized until the parking brake is sufficiently pressurized.

Re: claim 9. Beck, as modified, suggests that the high pressure compressed air load circuit 2.3 has a pressure level that is higher than in the secondary or low pressure load circuit 2.4 and suggests that the pressure level of the high pressure compressed air load circuit is higher than in the service brake circuits when the service brakes are not applied and the parking brake is, but is silent with regards to the pressure level between the high pressure compressed air load circuit and the other of the secondary load circuits.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the at least one secondary circuit of Beck, as modified, to have had a lower pressure level than in the high pressure compressed air load circuit, in view of the teachings of Terborn et al., in order to provide a desired pressure level depending on desired application.

Re: claim 10. Beck, as modified, teach in Beck the limitation wherein the at least one secondary load circuit includes solenoid valves 24, 26 and further comprising a pressure limiting valve 16, which limits pressure from right to left of the valve, interposed upstream from the solenoid valves of the at least one secondary load circuits.

Terminal Disclaimer

8. The terminal disclaimer filed on 9/27/11 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US

7946660 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Response to Arguments

9. Applicant's arguments filed 9/27/11 have been fully considered but they are not persuasive. Applicant argues that the prior art fails to show or suggest all of the elements of claim 1. Particularly, Applicant explains that the prior art fails to show or suggest the limitation wherein "the first plurality of electrically actuatabte valves are operable to supply compressed air to the service-brake circuits and are in open position in a de-energized default state". Examiner disagrees. Initially, Examiner relied on Beck in view of Freeman. In an interview Examiner, Examiner's supervisor, and Applicant's representative discussed the rejections using Beck in view of Freeman. It was explained by the Examiner that it would have been obvious to one of ordinary skill in the art to have modified the de-energized closed valves 21 and 22 of Beck that supply compressed air to the service brake circuits to have been de-energized open, in view of the teachings of Freeman, in order to provide a fail-safe means of supplying compressed air to the service brakes during power loss situations. Examiner noted that such a modification would eliminate the need for valve 26 making the electronic compressed air system less complicated. It was also discussed in the interview that one possible way to overcome the combination of Beck in view of Freeman was to recite that the first plurality of electrically actuatable valves were usually in an open position in a de-energized normal state since the Freeman valves were normally

energized and closed. In line with the interview, Applicant amended the claims to recite that the first plurality of electrically actuatable valves were open in a de-energized default state. The amendment resulted in the Examiner combining Beck with the Boylan reference which teaches in col. 9 lines 40-42 a first plurality of electrically actuatable valves which are open in a de-energized normal state (instead of normally energized closed as in Freeman). It is unclear to the Examiner how Applicant can now argue that the combination of Beck, as modified, fails to teach a first plurality of electrically actuatable valves that are open in a de-energized default state even in light of the explicit teaching in Boylan of electrically actuatable valves that are open in a normally de-energized state. Applicant goes on to explain that the default state refers to the state of the valves during normal driving regardless of whether the valves are normally open or normally closed in a de-energized state. Examiner notes that the "default" term was not defined in such a particular way to distinguish it from a normal state and, in fact, was never once used in the originally filed specification. The originally filed abstract discusses solenoid valves of service brake circuits being open in a de-energized normal state. Therefore, the instant disclosure suggests that the default state is the normal state. Such an arrangement is taught by Beck, as modified.

Accordingly, the rejections have been maintained.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 571-272-7114. The examiner can normally be reached on Monday-Friday (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

mmb
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